

WHAT IS CLAIMED IS:

1. A semiconductor thin film comprising:
at least two crystals;
grain boundaries among the crystals; and
wherein a rate of incommensurate bonds in respect of
all of bonds at the grain boundaries is equal to or smaller
than 5 %.
2. A film according to claim 1, wherein a major component
element constituting the crystal is silicon.
3. A semiconductor thin film comprising:
at least two crystals;
grain boundaries among the crystals; and
wherein a number of incommensurate bonds included in
100 of bonds is equal to or smaller than 5 at least in one
arbitrary region of the grain boundaries.
4. A film according to claim 3, wherein a major component
element constituting the crystal is silicon.
5. A semiconductor thin film comprising:
at least two crystals;
grain boundaries among the crystals; and
wherein a number of incommensurate bonds included in 50

of bonds is null at least in one arbitrary region of the grain boundaries.

6. A film according to claim 5, wherein a major component element constituting the crystal is silicon.

7. A semiconductor thin film comprising:
at least two crystals;
grain boundaries among the crystals; and
an angle made by a lattice striation observed in one arbitrary crystal of the at least two crystals and a lattice striation observed in other crystal contiguous to the one arbitrary crystal falls in a range of 60 through 80°.

8. A film according to claim 7, wherein a major component element constituting the crystal is silicon.

9. A semiconductor device which is an insulated gate type semiconductor device having at least an activation layer formed on a substrate having an insulating surface, a gate insulating film and a gate electrode:

wherein a semiconductor thin film constituting the activation layer comprises at least two crystals and grain boundaries among the crystals and a rate of incommensurate bonds in respect of all of bonds in the grain boundaries is

equal to or smaller than 5 %.

10. A device according to claim 9, wherein a major component element constituting the crystal is silicon.

11. A semiconductor device which is an insulated gate type semiconductor device comprising at least an activation layer formed on a substrate having an insulating surface, a gate insulating film and a gate electrode:

wherein a semiconductor thin film constituting the activation layer comprises at least two crystals and grain boundaries among the crystals and a number of incommensurate bonds included in 100 of bonds is equal to or smaller than 5 at least in one arbitrary region of the grain boundaries.

12. A device according to claim 11, wherein a major component element constituting the crystal is silicon.

13. A semiconductor device which is an insulated gate type semiconductor device comprising at least an activation layer formed on a substrate having an insulating surface, a gate insulating film and a gate electrode:

wherein a semiconductor thin film constituting the activation layer comprises at least two crystals and grain boundaries among the crystals and a number of incommensurate

bonds included in 50 of bonds is null at least in one arbitrary region of the grain boundaries.

14. A device according to claim 13, wherein a major component element constituting the crystal is silicon.

15. A semiconductor device which is an insulated gate type semiconductor device comprising at least an activation layer formed on a substrate having an insulating surface, a gate insulating film and a gate electrode:

wherein a semiconductor thin film constituting the activation layer comprises at least two crystals and grain boundaries among the crystals and an angle made by a lattice striation observed in one arbitrary crystal of the at least two crystals and a lattice striation observed in other crystals contiguous to the one arbitrary crystal falls in a range of 60 through 80°.

16. A device according to claim 15, wherein a major component element constituting the crystal is silicon.